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Osman Polat

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THE PROCTER & GAMBLE COMPANY
Global Legal Department - IP
Sycamore Building - 4th Floor
299 East Sixth Street
CINCINNATI, OH 45202

EXAMINER

PIZIALI, ANDREW T

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Response to Amendment

1. The amendment filed on 10/7/2009 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 5 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,538,595 to Trokhan in view of any one of USPN 2,113,431 to Milliken, USPN 3,034,180 to Greiner, USPN 5,245,025 to Trokhan, or USPN 5,328,565 to Rasch.

Trokhan discloses a fibrous tissue structure comprising at least two randomly distributed layers wherein at least one of the layers of the structure includes long (greater than about 2 mm) cellulosic fibers, at least one of the layers includes short (less than about 2 mm) cellulosic fibers, and that synthetic fibers may be used in combination with the cellulosic fibers (see entire document including column 6, lines 19-68, column 12, lines 31-65, and column 13, lines 25-67). Trokhan discloses that the long cellulosic fibers are softwood fibers (column 6, lines 19-68, column 12, lines 31-65, and column 13, lines 25-67).

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Trokhan discloses that the at least one other layer is disposed on the layer comprising randomly distributed softwood fibers (Figures, column 6, lines 19-68, column 12, lines 31-65, and column 13, lines 25-67), but Trokhan does not appear to specifically mention said other layer being disposed in a non-random pattern of regions of different basis weight as currently claimed. The secondary references each disclose that it is known in the tissue paper art to dispose an outer layer in a non-random pattern of regions of different basis weight, as currently claimed, motivated by a desire to increase performance, increase fluid permeability, and/or improve appearance.

Milliken discloses that a product (1) possesses apertures (2) (column 2, lines 1-32 and Figures 1 and 2). Since material is not present within the aperture regions the outer surface (surface layer) of the product is in a pattern of regions of different basis weight. The regions possessing material are regions of a higher basis weight than the regions (apertures) not possessing material. The regions are clearly not randomly patterned because the apertures are lined up in rows (see Figure 1).

Greiner discloses that the product possesses apertures due to the forming wire (24) possessing cones (34) wherein the deposited fibers are directed by the walls of the cones to a position at the bases thereof with the result that a substantial portion of said fibers assume a position of rest on the wire which is generally tangential to the cones at their bases (column 2, lines 50-66). The regions surrounding the base of the cones are regions of a higher basis weight than the other regions because a substantial portion of said fibers assume a position of rest on the wire which is generally tangential to the cones at their bases. The regions are clearly not randomly patterned because the cones are lined up in rows (see Figure 4).

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Trokhan '025 clearly discloses that it is known in the art to include a non-random pattern of regions of different basis weight (column 4, lines 52-68).

Rasch discloses that it is recognized by one skilled in the art that with in a given region ordinary and expected basis weight fluctuations and variations occur (paragraph bridging columns 6 and 7).

As explained above, Milliken, Greiner, Trokhan, and Rasch each disclose that it is known in the tissue paper art to dispose an outer layer in a non-random pattern of regions of different basis weight, as currently claimed, motivated by a desire to increase performance, increase fluid permeability, and/or improve appearance. It would have been obvious to one having ordinary skill in the art at the time the invention was made to dispose the other layer in a non-random pattern of regions of different basis weight, as taught by Milliken, Greiner, Trokhan, and Rasch, motivated by a desire to increase performance, increase fluid permeability, and/or improve appearance.

Regarding claim 5, Trokhan discloses that the short cellulosic fibers are hardwood fibers (column 6, lines 19-68, column 12, lines 31-65, and column 13, lines 25-67).

Regarding claim 18, Trokhan discloses that the fibrous structure may be creped, uncreped or embossed (column 6, lines 32-37 and column 9, lines 48-58).

Regarding claim 19, Trokhan discloses that the fibrous structure may be combined with a separate structure to form a multi-ply article (column 6, lines 32-37 and column 13, line 60 through column 14, line 33).

Regarding claim 20, Trokhan discloses that a latex may be disposed on at least a portion of the unitary structure (column 10, lines 5-21).

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4. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,538,595 to Trokhan in view of any one of USPN 2,113,431 to Milliken, USPN 3,034,180 to Greiner, USPN 5,245,025 to Trokhan, or USPN 5,328,565 to Rasch as applied to claims 1, 5 and 18-20 above, and further in view of USPN 6,548,731 to Mizutani.

Trokhan is silent with regards to a specific fiber length ratio between the synthetic fibers and the short fibers, therefore, it would have been necessary and thus obvious to look to the prior art for conventional ratios. Mizutani provides this conventional teaching showing that it is known in the absorbent product art to use cellulosic fibers that are shorter than the synthetic fibers resulting in an absorbent article that passes a large amount of liquid so as to keep the surface dry while not having a wet feel (see entire document including column 1, lines 9-15). Mizutani mentions a synthetic fiber to short fiber ratio of between about 1 and about 13 (column 4, lines 50-65). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the mixture with a synthetic fiber to short fiber ratio of 1 to 13, because the absorbent article would pass a large amount of liquid thus keeping the surface dry while not having a wet feel, and motivated by the expectation of successfully practicing the invention of Trokhan.

5. Claims 4, 8-12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,538,595 to Trokhan in view of any one of USPN 2,113,431 to Milliken, USPN 3,034,180 to Greiner, USPN 5,245,025 to Trokhan, or USPN 5,328,565 to Rasch as applied to claims 1, 5 and 18-20 above, and further in view of WO 93/14267 to Manning.

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Regarding claim 4, Trokhan is silent with regards to a PTP factor (diameter ratio) between the synthetic fibers and the short fibers, therefore, it would have been necessary and thus obvious to look to the prior art for conventional PTP factors. Manning provides this conventional teaching showing that it is known in the cellulosic and synthetic fiber mixture art to use synthetic and cellulosic fibers with a PTP factor of greater than about 0.75. Manning mentions synthetic fibers with a diameter of about 0.5 to 15 denier and cellulosic fibers with a diameter of 1 to 30 denier (see entire document including page 7, lines 8-24 and page 8, lines 1-15). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a PTP factor of greater than about 0.75, motivated by the expectation of successfully practicing the invention of Trokhan.

Regarding claim 8, Trokhan discloses that the short cellulosic fibers may have a length weighted average fiber length of less than about 1 mm (column 13, lines 25-42), but Trokhan does not mention an average cellulosic fiber width. Trokhan is silent with regards to an average cellulosic fiber width, therefore, it would have been necessary and thus obvious to look to the prior art for conventional cellulosic fiber widths. Manning provides this conventional teaching showing that it is known in the art to use cellulosic fibers with an average fiber width of less than about 18 micrometers (see entire document including page 7, lines 8-24). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the short cellulosic fibers with an average fiber width of less than about 18 micrometers motivated by the expectation of successfully practicing the invention of Trokhan.

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Regarding claim 9, Trokhan is silent with regards to the synthetic fiber diameter and length, therefore, it would have been necessary and thus obvious to look to the prior art for conventional synthetic fiber diameters and lengths. Manning provides this conventional teaching showing that it is known in the absorbent product art to use synthetic fibers with a length weighted average fiber length of more than about 2 mm and a diameter of more than about 15 micrometers (page 7, lines 8-24). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use synthetic fibers with a length weighted average fiber length of more than about 2 mm and a diameter of more than about 15 micrometers, motivated by the expectation of successfully practicing the invention of Trokhan.

Regarding claim 10, Trokhan discloses that the long cellulosic fibers may have a length weighted average fiber length of greater than about 2 mm (column 13, lines 25-42), but Trokhan does not mention the average cellulosic fiber width. Trokhan is silent with regards to specific cellulosic fiber widths, therefore, it would have been necessary and thus obvious to look to the prior art for conventional widths. Manning provides this conventional teaching showing that it is known in the art to use cellulosic fibers with an average fiber width of less than 50 micrometers (see entire document including page 7, lines 8-24). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the long cellulosic fibers with an average fiber width of less than 50 micrometers motivated by the expectation of successfully practicing the invention of Trokhan.

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Regarding claims 11 and 12, Trokhan discloses that synthetic fibers may be utilized in combination with the cellulosic fibers, but Trokhan does not specifically mention bicomponent synthetic fibers. Manning discloses that it is known in the art to use bicomponent synthetic fibers to improve adhesion between fibers (see page 6, lines 11-25). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the synthetic fibers in any suitable known fiber configuration, such a bicomponent fiber configuration, as taught by Manning, because bicomponent fibers improve adhesion between the fibers and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability.

Regarding claim 12, Manning discloses that the bicomponent fibers may be polyester and/or polyolefin based (see page 7, lines 6-15).

Regarding claim 15, Manning discloses that the bicomponent fibers are heat fused to adhere the fibers (see page 8, line 17 to page 9, line 9).

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,538,595 to Trokhan in view of any one of USPN 2,113,431 to Milliken, USPN 3,034,180 to Greiner, USPN 5,245,025 to Trokhan, or USPN 5,328,565 to Rasch as applied to claims 1, 5 and 18-20 above, and further in view of USPN 4,202,959 to Henbest.

Trokhan is silent with regards to the synthetic fiber diameter and length, therefore, it would have been necessary and thus obvious to look to the prior art for conventional synthetic fiber diameters and lengths. Henbest provides this conventional teaching showing that it is known in the art to use synthetic fibers with a length weighted average fiber length of more than about 2 mm with an average fiber width of not more than 25 mm (see entire document including

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column 2, lines 13-38). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use synthetic fibers with a length weighted average fiber length of more than about 2 mm and a diameter of more than about 15 micrometers, as taught by Henbest, motivated by the expectation of successfully practicing the invention of Trokhan.

7. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,538,595 to Trokhan in view of any one of USPN 2,113,431 to Milliken, USPN 3,034,180 to Greiner, USPN 5,245,025 to Trokhan, or USPN 5,328,565 to Rasch as applied to claims 1, 5 and 18-20 above, and further in view of any one of USPN 5,405,499 to Vinson or USPN 5,409,572 to Kershaw.

Trokhan is silent with regards to specific coarseness values, therefore, it would have been necessary and thus obvious to look to the prior art for conventional coarseness values. Vinson and Kershaw each provide this conventional teaching showing that it is known in the art to use a low coarseness, such as less than about 25mg/100m, because the softness of the product relates to the coarseness and a softer product is desired (see entire documents including column 1, lines 24-60 of Vinson and column 3, line 65 through column 4, line 31 of Kershaw). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the mixture of short cellulosic fibers and synthetic fibers with a coarseness value of less than about 25mg/100m motivated by the expectation of successfully practicing the invention of Trokhan.

Response to Arguments

8. Applicant's arguments filed 10/7/2009 have been fully considered but they are not persuasive.

The applicant asserts that the applied prior art fails to teach or suggest the claimed fibrous structure. The examiner respectfully disagrees. Trokhan discloses a fibrous tissue structure comprising at least two randomly distributed layers wherein at least one of the layers of the structure includes long (greater than about 2 mm) cellulosic fibers, at least one of the layers includes short (less than about 2 mm) cellulosic fibers, and that synthetic fibers may be used in combination with the cellulosic fibers (see entire document including column 6, lines 19-68, column 12, lines 31-65, and column 13, lines 25-67). Trokhan discloses that the long cellulosic fibers are softwood fibers (column 6, lines 19-68, column 12, lines 31-65, and column 13, lines 25-67).

Trokhan discloses that the at least one other layer is disposed on the layer comprising randomly distributed softwood fibers (Figures, column 6, lines 19-68, column 12, lines 31-65, and column 13, lines 25-67), but Trokhan does not appear to specifically mention said other layer being disposed in a non-random pattern of regions of different basis weight as currently claimed. The secondary references each disclose that it is known in the tissue paper art to dispose an outer layer in a non-random pattern of regions of different basis weight, as currently claimed, motivated by a desire to increase performance, increase fluid permeability, and/or improve appearance.

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Milliken discloses that the product (1) possesses apertures (2) (column 2, lines 1-32 and Figures 1 and 2). Since material is not present within the aperture regions the outer surface (surface layer) of the product is in a pattern of regions of different basis weight. The regions possessing material are regions of a higher basis weight than the regions (apertures) not possessing material. The regions are clearly not randomly patterned because the apertures are lined up in rows (see Figure 1).

Greiner discloses that the product possesses apertures due to the forming wire (24) possessing cones (34) wherein the deposited fibers are directed by the walls of the cones to a position at the bases thereof with the result that a substantial portion of said fibers assume a position of rest on the wire which is generally tangential to the cones at their bases (column 2, lines 50-66). The regions surrounding the base of the cones are regions of a higher basis weight than the other regions because a substantial portion of said fibers assume a position of rest on the wire which is generally tangential to the cones at their bases. The regions are clearly not randomly patterned because the cones are lined up in rows (see Figure 4).

Trokhan '025 clearly discloses that it is known in the art to include a non-random pattern of regions of different basis weight (column 4, lines 52-68).

Rasch discloses that it is recognized by one skilled in the art that with in a given region ordinary and expected basis weight fluctuations and variations occur (paragraph bridging columns 6 and 7).

Conclusion

9. Applicant's amendment necessitated any new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Piziali whose telephone number is (571) 272-1541. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew T Piziali/

Primary Examiner, Art Unit 1794